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FIRST ALL-UNION CONFERENCE ON AEROHYDRODYNAMICS

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A. A. Nikol'skiy

The First All-Union Conference on Aerohydrodynamics (8-13 December 1952) was called together by the Institute of Mechanics, Academy of Sciences USSR. More than 200 scientific associates of institutions of the Academy of Sciences USSR and other scientific research organizations, along with professors and teachers in higher educational institutions, took part in the conference. Papers on problems of hydrodynamics, aerodynamics, and filtration were presented.

Academician A. I. Nekrasov, President of the Organization Committee of the First All-Union Conference on Aerohydrodynamics, remarked in his opening speech that the directives of the 19th Party Congress and the teachings of I. V. Stalin obligate scientific workers to analyze attentively both the plans of scientific research work and the state of their fulfillment. Academician S. A. Khristianovich described the problems arising from the construction of the Kuybyshev hydroelectric station and dwelled on the problems of hydromechanization.

The results of the work of the conference were indicated in a resolution of the conference. It was noted that the scientists' response to the problems of industry and their solution was inadequate. Another inadequacy cited was the absorption of some leading scientific workers in practical problems to the neglect of the further development of basic problems and the promotion of new problems in the development of theory. These inadequacies can be overcome only by the extensive development of criticism and self-criticism, accomplished in the first place by creative discussions, scientific conferences, and seminars.

The conference put forward a series of suggestions: (1) the creation of a vast network of experimental bases for aerodynamics and hydrodynamics; (2) organization for exchange of information through the journal Prikladnaya Matematika i Mekhanika (Applied Mathematics and Mechanics); (3) the publication of the works of the All-Union Conference on Aerohydrodynamics; (4) the publication of translations of the works of L. Euler on integral calculus and hydrodynamics and the works of D. Bernoulli on hydrodynamics.

In connection with the paper of K. P. Stanyukovich, the necessity of calling the problems of cosmogony to the attention of investigators in the field of gas dynamics was emphasized. In connection with the formation of various opinions on the theory of cascades, a suggestion was made to call together a special conference on the establishment and introduction into practice of better methods of calculation.

The following papers, presented at the plenary session, deal with problems of filtration in connection with problems of petroleum extraction, the theory of flowing past cascades, the theory of profiles, jet streams, and wing flutter:

Golubev, V. V.
 [Moscow Aviation Institute]

"Efficiency of a Fluttering Wing"

Mel'nikov, A. P.

"Questions on the Stability of Laminar
 Boundary Layers and the Calculation
 of the Point of Turbulent Passing Over
 on a Wing"

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Tumashev, G. G.	"Some Inverse Limit Problems Having Application In Aerohydrodynamics"
Sretenskiy, L. N.	"Spatial Steady State Waves of Finite Amplitude"
Loytsyanskiy, L. G. [Central Aerohydrodynamics Institute]	"Propagation of a Twisted Stream in an Infinite Space, Filled by the Same Liquid"
Moiseyev, N. N.	"Some Questions of the Motion of a Movable and Deformed Vessel With Liquid"
Galim, L. A. [Institute of Mechanics, Academy of Sciences, USSR]	"Some Questions of Unsettled Filtration"
Numerov, S. N.	"An Approximate Method of Calculating Filtration"
Verigin, N. N.	"Linear Theory of the Movement of Ground Water and Its Application in Hydraulic Engineering"
Stanyukovich, K. P. [Institute of Physical Problems, Academy of Sciences USSR]	"Basic Mechanism of the Motion of a Gas in the Field of Gravity"
Dombrovskiy, G. A.	"The Problem of Supersonic Flow of Gas From a Nozzle"
Prokof'yev, V. A.	"One-Dimensional Stationary Motion of a Radiating Non-Viscous Gas Taking Into Account Ionization"
Frankl, F. I. (Moscow State University)	"Side Water Intake From Rapid Shallow Rivers"
	"Jet Flow Around a Sharp Wedge by a Plane-Parallel Stream of Gas and a Current of Water in an Open Channel During Critical Speeds"
Rosenberg, M. D.	"Unsteady Motion of Multiphase Liquids"
Shaposhnikov, I. G. (Molotov State University)	"Hydrodynamics of Convection Phenomena in Binary Mixtures"
Teletov, S. G. (Power Engineering Institute imeni Krzhizhanovskiy)	"Equations of the Hydrodynamics and Energy of Biphasic Mixtures"
	"Experimental Investigations of the Flow of Gas-Liquid Mixtures in Pipes"
Kufarev, P. P. (Physicotechnical Institute, Tomsk State University)	"Macromorphous Solutions of the Problem of Shifting of Contours of Oil-Bearing Beds"
Rybkachev, G. B.	"Separating Oil From a Horizontal Bed Under the Influence of a Forcing Gas"

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Numerov, S. N.	"Method of Boundary Problems"
Vasil'yev, O. F.	"Some Questions on the Theory of Spiral and Circulatory Streams"
Ovsyannikov, L. V.	"Symmetrical Flow of a Near-Sonic Current Past a Wedge-Like Profile"
Agarev, V. A.	"Investigation of Additional Rarefaction on the Crest of a Wave, Laid out on an Arbitrary Profile"
Zhukovskiy, M. I. (Central Boiler-Turbine Institute, Leningrad)	"Theoretical Methods of Improving Cascades of Turbine Machine Profiles"
Nuzhin, S. G.	"Calculation of Cascades in the Potential Flow of an Incompressible Liquid"
Ostroumov, G. A. (Molotov State University)	"Experimental Investigation of Hydrodynamic Phenomena Observed During Evaporation of Water From Vertical or Slightly Inclined Canals"
Lambin, N. V.	"Spillway in a Two-Layer Medium"
Charnyy, I. A. (Institute of Mechanics, Academy of Sciences USSR)	"Inflow With Imperfect Oil Wells In Oil Deposits With Base Water or a Gas Cap (Water and Gas Cones)"
Piskunov, N. S. (Mathematics Institute imeni V. A. Steklov)	"Extraction of Petroleum From Water-Oil Beds"
Pilatovskiy, V. P.	"Heterogeneous Stratified Flow With a Battery of Wells Draining a Conical Bed"
Dolidze, D. Ye. (Mathematics Institute imeni A. A. Razmadze)	"Uniqueness of Solution of the Fundamental Boundary Problem of a Viscous Incompressible Liquid"
Arzhanykh, I. S. (Institute of Mathematics and Mechanics, Uzbek Academy of Sciences)	"Some New Problems of the Integration of Differential Equations In Hydrodynamics"
Nuzhin, M. T.	"Statement and Solution of the Problem of Determining the Form of an Underground Contour of a Hydraulic Engineering Structure"
Mikhaylov, G. K.	"Filtration in Trapezoidal Dams on an Impervious Foundation With a Vertical Upper Bank"
Efros, D. A. (All-Union Petroleum Scientific Research Institute, Ministry of the Petroleum Industry)	"New Investigations of the Movement of Heterogeneous Liquids In a Porous Medium"

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